

LIRR
Long Island City Freight Yard (AOC 1)
Draft Upland Site Summary

LIRR LONG ISLAND CITY FREIGHT YARD (AOC 1; DAR SITE ID #128)

Address: Jackson Avenue at 21st Street, Long Island City, New York
11101
(21-16 Jackson Avenue, Long Island City)

Tax Lot Parcel(s): Queens Block 72, Lot 1

Latitude: 40.744545

Longitude: -73.948294

Regulatory Programs/
Numbers/Codes: NYSDEC Spill No. 0650112 and No. 0100110,
USEPA ID Nos. NYR000013797, NYR000021345,
PBS No. 2-476722

Analytical Data Status: ☐ Electronic Data Available ☒ Hardcopies only
☐ No Data Available

**1 SUMMARY OF CONSTITUENTS OF POTENTIAL CONCERN (COPCs) TRANSPORT
PATHWAYS TO THE CREEK**

The current understanding of the transport mechanisms of contaminants from the upland portions of the Long Island Railroad (LIRR) Long Island City Freight Yard (AOC 1) site (site) to Newtown Creek is summarized in this section and Table 1 and supported in the following sections.

Overland Transport

This site is 0.4 mile from Newtown Creek and associated waterways. This is not a complete current or historical pathway.

Bank Erosion

The site is not adjacent to Newtown Creek or associated waterways. This is not a complete current or historical pathway.

Groundwater

Groundwater investigations conducted in 1994, 1996, and 2008 indicate historical groundwater contamination at the site. Elevated concentrations of volatile organic compounds (VOCs) and semi-volatile organic compound (SVOCs), along with the metals lead and antimony, have been detected both on site and north of the site. Groundwater flow at the site is in a north to northwesterly direction, toward the East River, while Newtown Creek is located approximately 0.4 mile to the south of the site. This is not a complete current or historical pathway.

Overwater Activities

The site is not adjacent to Newtown Creek and associated waterways. Information regarding overwater activities was not identified in documents available for review. This is not a complete current or historical pathway.

Stormwater/Wastewater Systems

Information on stormwater infrastructure was not found in available site documents. The site is located in an area bordering two sewersheds: the Bowery Bay Water Pollution Control Plant (WPCP) and the Newtown Creek WPCP. No other information regarding the municipal system in this area was found in available documents. There is insufficient evidence to make a current or historical pathway determination for discharge to the sewer/CSO or direct discharge of stormwater and wastewater.

Air Releases

Information related to air discharges was not located for this site. There is insufficient evidence to make a current or historical pathway determination.

2 PROJECT STATUS

A summary of investigation and remedial activities at the site is provided in the following table:

Activity		Date(s)/Comments
Phase 1 Environmental Site Assessment	<input checked="" type="checkbox"/>	A Phase 1 ESA was conducted in 1993 and 1994 and reported in the 1994 Preliminary

Activity		Date(s)/Comments
		Investigation Report (STV and EPM 1994).
Site Characterization	<input checked="" type="checkbox"/>	A site characterization was conducted during Phase I of the 1994 Preliminary Investigation Report (STV and EPM 1994).
Remedial Investigation	<input checked="" type="checkbox"/>	An RI was conducted in 1996 and reported in the 1997 RI Report (STV 1997). A RI Work Plan was approved in 2010 for further investigation of soil and groundwater contamination at the site (D&B 2010b).
Remedy Selection	<input checked="" type="checkbox"/>	A Tank Closure Program was conducted in 1995 and reported in the 1995 Tank Closure Report (STV and EPM 1995).
Remedial Design/Remedial Action Implementation	<input checked="" type="checkbox"/>	In 1995, nine USTs and one AST were removed from the site, along with approximately 100 tons of excavated contaminated soil and approximately 500 gallons of petroleum contaminated water (STV and EPM 1995; USEPA 1995). An RAP was included in the 1997 RI Report (STV 1997). Available site documents did not indicate if the 1997 SAP was fully implemented.
Use Restrictions (Environmental Easements or Institutional Controls)	<input type="checkbox"/>	
Construction Completion	<input type="checkbox"/>	
Site Closeout/No Further Action Determination	<input type="checkbox"/>	

Notes:

AST – aboveground storage tank

USEPA – U.S. Environmental Protection Agency

EPM – Environmental Planning and Management, Inc. STV – STV, Inc.

ESA – Environmental Site Assessment

RAP – Remedial Action Plan

RI – Remedial Investigation

SAP – Sampling and Analysis Plan

UST – underground storage tank

3 SITE OWNERSHIP HISTORY

Respondent Member:

☐ Yes ☒ No

Owner	Years	Occupant	Types of Operations
Vacant	ca. 1898	Vacant	Vacant
LIRR	ca. 1915	LIRR Freight Yard	Unknown; freight office and sheds, and wagon storage on site
	ca. 1936	LIRR Freight Yard	Office
	ca. 1943 – 1955	Unknown	Gasoline filling station
	1955 – 1966	Banner Service Stations, Inc. leased site to Gulf Oil Corporation (Banner Service Stations, Inc. 1965)	
Delbay Corporation subsidiary of LIRR	1966 – unknown	Unknown	Solid waste management facility
LIRR	ca. 1981 – ca. 1984		
	ca. 1994 – 1995	Hampton Materials and Handling, Inc.	Solid waste management facility
	1995 – unknown	C & H Sand & Stone, Corporation	
	ca. 2007 – current	LIRR leases to New York and Atlantic Railroad that subleases to Sherwood Lumber	Lumber yard/lumber retailer

Notes:

ca. – circa

LIRR – Long Island Railroad

NYAR – New York and Atlantic Railroad

4 PROPERTY DESCRIPTION

The site occupies approximately 0.33 acre¹. Dutch Kills, a tributary to Newtown Creek, is located approximately 0.6 mile east of the site; Newtown Creek is located approximately 0.4 mile south of the site; and the East River is located approximately 0.7 mile west of the site. The site is surrounded by several roads and buildings that are located between the site and each water body, as shown in Figure 1. The site, a former gasoline station, appears to have a

¹ Acreage is an approximation of the site tax parcel using geographic information system data.

paved or mixed dirt surface and is partially covered by what appears to be stacks of wood planks (Google Earth 2012). The site is bounded by Jackson Avenue to the north, a neighboring property to the east, the LIRR Freight Yard to the south, and Arch Street to the west (see Figure 1).

The site and immediate area located south of Jackson Avenue are zoned for manufacturing. The immediate area north of Jackson Avenue is zoned residential. The surrounding area is highly developed and heavily industrialized.

5 CURRENT SITE USE

The site is owned by LIRR. LIRR has leased the site to New York and Atlantic Railroad (NYAR) from sometime around 2007 to present day (LIRR 2007a, 2011b). In that time, NYAR has sublet the majority of the site, which currently utilizes the site as a lumber yard. An abandoned concrete office and maintenance garage are located at the site.

6 SITE USE HISTORY

Historical records associate this site to several different blocks, lots, and physical addresses.

In 1898, the site occupied Block 88, Lots 1 through 6; however, at that time, the LIRR Freight Yard did not exist (Sanborn 1898). By 1915, the LIRR Freight Yard was developed and the site occupied Block 88, Lots 1 through 4, 10 and 11 (STV and EPM 1994; Sanborn 1915). An iron-framed freight office, freight sheds, and “wagon storage” also operated on site.

In 1936, the site occupied Block 87 (formerly Block 88) and an office had been constructed at the southwest corner of the site (Sanborn 1936).

In 1943, a gasoline filling station, including two structures and two underground storage tanks (USTs), occupied the site (Sanborn 1943). The address, “2116,” also began at the site at this time.

Historical records indicate a gas station began operations at the site in the early 1940s under a lease agreement with LIRR (STV and EPM 1994; D&B 2010b). The site was used as a

gasoline service station for approximately 45 years until the gas station ceased operations sometime before September 1984 (STV and EPM 1994; D&B 2010b). During this time, several blocks and lots were associated with the site.

Hampton Materials and Handling, Inc., a solid waste management facility, occupied the site as early as 1994 under the address 21-16 Jackson Avenue (NYSDEC 1994b; EDR 2010).

Hampton Materials and Handling, Inc. accepted waste material including clay, topsoil/loam, rock, brick, concrete, and asphalt and shipped it off site by rail (NYSDEC 1994b).

In 1995, Hampton Materials and Handling, Inc. changed its name to C & H Sand & Stone, Corp. (NYSDEC 1995). C & H Sand & Stone, Corp. also operated a solid waste management facility and accepted waste material including sand, gravel, concrete, dirt, rock, glass, and asphalt (NYSDEC 1996). It is not known when C & H Sand & Stone, Corp. vacated the site.

The New York State Department of Environmental Conservation (NYSDEC) quarterly progress reports for the site indicate that from sometime around 2007 to present day, LIRR has leased the site to NYAR, who subleases to Sherwood Lumber, a lumber retailer (LIRR 2007a, 2011b). Most recent records indicate the site is located at Block 72, Lot 1.

7 CURRENT AND HISTORICAL AREAS OF CONCERN AND COPCs

The current understanding of the historical and current potential upland and overwater areas of concern at the site are summarized in Table 1. The following sections provide brief discussion of the potential sources and COPCs at the site requiring additional discussion. Potential areas of concern at the site include spills, aboveground storage tanks (ASTs) and USTs, petroleum conveyance pipelines, and equipment used in solid waste management operations. The COPCs for these sources include petroleum hydrocarbons (including leaded gasoline and fuel oil), VOCs (including benzene, toluene, ethylbenzene, xylene [BTEX], and benzene-related compounds), SVOCs, polycyclic aromatic hydrocarbons (PAHs), and metals (including lead and antimony).

7.1 Uplands

The site was utilized as a gas station for more than 45 years (STV and EPM 1994; LIRR 2007a, 2011b). In 1989, nine 550-gallon, steel USTs registered to LIRR (Petroleum Bulk Storage Facility [PBS] No. 2-476722) were located at the site (STV and EPM 1994). The installation date of the USTs is unknown. The nine USTs stored gasoline and had no leak detection or secondary containment (EDR 2010; NYSDEC 2012). A 1995 Sampling and Analysis Plan (SAP) prepared for the site confirmed the presence of the nine USTs located at the site and indicated one 275-gallon AST storing fuel oil was also located at the site (LIRR 1995; STV 1997). The nine USTs and one AST, associated piping, and contaminated soil and groundwater were removed from the site in 1995. Details of this removal are described in Section 9 of this site summary.

LIRR Long Island City (LIC) Freight Yard was classified as a Resource Conservation and Recovery Act (RCRA) hazardous waste non-generator in 2007 (EDR 2010). Records indicate the site was intermittently classified as an RCRA hazardous waste non-generator and large quantity generator from 1995 to 2007 (EDR 2010). Historical hazardous waste manifest information for the site indicates handling of waste code D008 (lead; EDR 2010; RCRIS 2012).

7.2 Overwater Activities

This site is not adjacent to Newtown Creek or associated waterways. Information regarding overwater activities was not identified in documents available for review.

7.3 Spills

Documented spills at the site are summarized as follows:

- On May 1, 1994, a spill to the soil and groundwater of an unknown petroleum substance in an unknown amount was reported at the site (NYSDEC Spill No. 0650112; NYSDEC 1994a, 2012; EDR 2010). No direct evidence of an actual spill was found; the spill was identified during a site investigation in 1994. However, given the historical site use operations as a gasoline service station, the release was assumed to be gasoline (NYSDEC 1994a). Spill Close Date: Not closed.

- On April 4, 2001, a petroleum spill to the soil of an unknown amount was reported at the site (NYSDEC Spill No. 0100110; EDR 2010; NYSDEC 2012). Reports indicate a contractor was removing a tank and struck the tank causing the spill. Corrective action was taken. Spill Close Date: February 17, 2004.

8 PHYSICAL SITE SETTING

8.1 Geology

Surface topography in the vicinity of the site gently slopes northeasterly (see Figure 1). Subsurface data collected at the site indicate the site is underlain by a fill unit of miscellaneous heterogeneous material overlying glacier out-wash, consisting of well sorted sand and gravel (STV and EPM 1994, 1995). Fill materials and soil are generally described as yellowish brown to black fine sand and silt to a light brown fine to coarse sand and fine to medium well-rounded gravel (STV and EPM 1994).

8.2 Hydrogeology

Regional groundwater in the area flows generally in a westerly direction toward the East River. Historical investigations conducted at the site, however, indicate the groundwater flows in a north to northwesterly direction (STV and EPM 1994, 1995; LIRR 2008c; D&B 2010b). Groundwater patterns at the site are believed to be influenced by the heterogeneous-nature of the fill material underneath the site and the presence of the below grade subway tunnel immediately to the north of the site. Historical investigations indicate groundwater is approximately 5 feet below ground surface (bgs) at the site (STV and EPM 1994, 1995; LIRR 2008c; D&B 2010b).

9 NATURE AND EXTENT (CURRENT UNDERSTANDING OF ENVIRONMENTAL CONDITIONS)

9.1 Soil

Soil Investigations

Bank Samples

Soil-Vapor Investigations

☒ Yes ☐ No
☐ Yes ☐ No ☒ Not Applicable
☐ Yes ☒ No

9.1.1 Soil Investigations

LIRR contracted STV Incorporated (STV) and Environmental Planning and Management, Inc. (EPM) to conduct a preliminary subsurface investigation at the site as part of a Preliminary Site Assessment conducted from 1993 to 1994 (STV and EPM 1994). This assessment comprised a Phase I Site Assessment and Phase II sampling activities. During the investigation, 26 soil borings were advanced at the site (see Attachment 1; STV and EPM 1994). On December 15 and 16, 1994, subsurface soil samples were collected at depths of 3 to 5 feet bgs, 5 to 7 feet bgs and 8 to 10 feet bgs. Samples were field screened for organic vapors using a photoionization device (PID) and a flame ionization device (STV and EPM 1994). U.S. Environmental Protection Agency (USEPA) Methods 8021 and 8015 were used to analyze soil samples for total petroleum hydrocarbons (TPH), BTEX, VOCs, SVOCs, and polychlorinated biphenyls (PCBs; STV and EPM 1994). No surface soil samples (0 to 2 feet bgs) were collected during this investigation.

Analytes that exceeded their respective recommended soil cleanup standards are summarized in the following table:

Analyte	Units	Maximum Soil Concentration
TPHs	ppm	6,000
VOCs		
1,2,4-Trimethylbenzene	ppb	580,000
1,3,5-Trimethylbenzene	ppb	170,000
Benzene	ppb	5,700
Ethyl benzene	ppb	120,000
Isopropyl benzene	ppb	3,200
Naphthalene	ppb	100,000
n-Butylbenzene	ppb	54,000
n-Propylbenzene	ppb	85,000
p-Isopropyltoluene	ppb	160,000
sec-Butylbenzene	ppb	2,500
Toluene	ppb	24,000
Xylenes (total)	ppb	770,000
SVOCs		
Acenaphthene	ppb	480

Analyte	Units	Maximum Soil Concentration
Benzo(a)anthracene	ppb	1,300
Benzo(a)pyrene	ppb	1,900
Benzo(b)fluoranthene	ppb	1,400
Benzo(k)fluoranthene	ppb	1,300
Chrysene	ppb	1,300
Fluoranthene	ppb	3,300
Indeno(1,2,3-cd)pyrene	ppb	1,600
Phenanthrene	ppb	3,500
Pyrene	ppb	3,600

Notes:

ppb – parts per billion

ppm – parts per million

SVOC – semi-volatile organic compound

TPH – total petroleum hydrocarbon

VOC – volatile organic compound

Samples collected during the preliminary investigation detected VOCs and SVOCs exceeding NYSDEC Spills Technology and Remediation Series (STARS) Technical and Administrative Guidance Memorandums (TAGM) 4046 Recommended Cleanup Objectives. Exceedences, primarily BTEX, benzene-related compounds and PAHs, were collected from the 5- to 7-foot interval. TPHs were also detected with a maximum concentration of 6,000 parts per million (ppm). Contamination was also found at the depth of the existing water table at the far northern side of the site. The northern contamination, however, was speculated to originate from an off-site source (see Attachment 2; STV and EPM 1994).

In 1995, as part of tank closure and removal procedures, soil samples were collected and analyzed from the excavation area at the site (STV and EPM 1995). These results are discussed in Section 10 of this site summary.

In 2008, an additional site investigation was conducted to further identify the extent of petroleum contamination caused by historical operations at the site (LIRR 2008c). Prior to the investigation, as recommended in the 2007 Site Investigation Work Plan, two groundwater monitoring wells were re-installed at the locations of former on-site monitoring wells. Three new monitoring wells were also installed downgradient of the site,

and four soil probes were advanced at the site in the vicinity of the former UST area (see Attachment 4; LIRR 2007e). Two soil samples were collected from seven of the nine sample locations, and three samples were collected from the remaining two locations. Subsurface samples were collected from 2-foot intervals at depths between 2 and 12 feet bgs and analyzed for STARS List VOCs and SVOCs (including methyl tertiary butyl ether [MTBE]; LIRR 2008c). No surface samples (0 to 2 feet bgs) were collected during this investigation.

Analytes that exceeded their respective recommended soil cleanup standards are summarized in the following table:

Analyte	Units	Maximum Soil Concentration
VOCs		
Ethyl Benzene	ppb	23,700
o-Xylene	ppb	37,700
m,p-Xylenes	ppb	128,000
SVOCs		
Benzo(a)anthracene	ppb	5,410
Benzo(a)pyrene	ppb	3,690
Benzo(b)fluoranthene	ppb	3,880
Benzo(k)fluoranthene	ppb	3,270
Chrysene	ppb	3,600

Notes:

ppb – parts per billion

SVOC – semi-volatile organic compound

VOC – volatile organic compound

VOC and SVOC concentrations including BTEX, benzene-related compounds and PAHs, exceeded NYSDEC STARS TAGM 4046 Recommended Soil Cleanup Objectives in samples collected near the former UST area. Maximum exceedences included ethylbenzene and total xylenes, which were detected at concentrations of 23,700 parts per billion (ppb) and 165,700 ppb, respectively. VOCs and SVOCs were present in the soil at depths ranging from 2 to 10 feet bgs; however, most exceedences were detected at 6 to 10 feet bgs (LIRR 2008c).

9.1.2 Soil Summary

Soil investigations conducted on the site found COPCs in subsurface soils during both a 1994 Preliminary Subsurface Investigation and during further investigations in 2008. COPCs were detected in soils at depths between 2 and 10 feet bgs and many detected COPCs exceeded their respective NYSDEC STARS TAGM 4046 recommended cleanup criteria.

9.2 Groundwater

Groundwater Investigations

☒ Yes ☐ No

NAPL Presence (Historical and Current)

☐ Yes ☒ No

Dissolved COPC Plumes

☐ Yes ☒ No

Visual Seep Sample Data

☐ Yes ☐ No ☒ Not Applicable

9.2.1 Groundwater Investigations

LIRR contracted STV and EPM to conduct a preliminary subsurface investigation at the site as part of a Preliminary Site Assessment conducted from 1993 to 1994 (STV and EPM 1994).

This assessment comprised a Phase I Site Assessment and Phase II sampling activities.

During this investigation, three groundwater monitoring wells were installed at the site and were sampled on February 22 and March 24, 1994 (STV and EPM 1994). Groundwater samples were collected from monitoring wells screened across and below the water table to a depth of 25 feet. USEPA Methods 8021 and 8015 were used to analyze samples for TPH, and target compound list VOCs, SVOCs, and metals (STV and EPM 1994). Analytes that exceeded their respective recommended groundwater standards (NYSDEC Class GA Groundwater Standards [STV and EPM 1994]) are summarized in the following table:

Analyte	Units	Maximum Groundwater Concentration
VOCs		
1,2,4-Trimethylbenzene	µg/L	1,500
1,3,5-Trimethylbenzene	µg/L	470
Benzene	µg/L	1,100
Ethyl Benzene	µg/L	1,400
Isopropyl benzene	µg/L	54
Naphthalene	µg/L	350
n-Butylbenzene	µg/L	120

Analyte	Units	Maximum Groundwater Concentration
n-Propylbenzene	µg/L	74
Toluene	µg/L	600
Total Xylene	µg/L	9,100
SVOCs		
Naphthalene	µg/L	98
Metals		
Antimony	µg/L	146
Lead	µg/L	54.7

Notes:

µg/L – microgram per liter

SVOC – semi-volatile organic compound

VOC – volatile organic compound

Findings from the preliminary investigation indicated groundwater contamination at the site, including detection of dissolved hydrocarbons in the groundwater (see Attachment 3; STV and EPM 1994). Elevated concentrations exceeding criteria were collected during both groundwater sampling events. Exceedences detected were primarily BTEX, benzene-related compounds, and PAHs. The majority of exceedences were collected from monitoring well FYMW-2, which is located in the vicinity of the former UST area.

In 1996, STV was contracted by LIRR to collect downgradient groundwater quality information to supplement the data collected from the 1994 Preliminary Investigation. The purpose of this remedial investigation was to determine if groundwater quality surrounding the site was impacted by the historical use and operations conducted at the site (STV 1997). Groundwater samples were collected from four off-site monitoring wells located downgradient of the former UST area and also from the three existing on-site monitoring wells. Samples were analyzed for VOCs plus MTBE using USEPA Method 8021, lead and antimony (STV 1997). Analytes that exceeded their respective recommended groundwater standards (NYSDEC Class GA Groundwater Standards) are summarized in the following table:

Analyte	Units	Maximum Groundwater Concentration	Sampling Location
VOCs			
1,2 Xylene	µg/L	79	FYMW-2 (on site)
1,3 Xylene	µg/L	470	FYMW-2 (on site)
1,2,4-Trimethylbenzene	µg/L	440	FYMW-2 (on site)
1,3,5-Trimethylbenzene	µg/L	170	FYMW-2 (on site)
Benzene	µg/L	140	FYMW-2 (on site)
Ethyl Benzene	µg/L	190	FYMW-2 (on site)
Isopropyl benzene	µg/L	68	G-2 (off site)
Naphthalene	µg/L	66	FYMW-2 (on site)
n-Butylbenzene	µg/L	280	G-2 (off site)
n-Propylbenzene	µg/L	77	G-2 (off site)
sec-Butylbenzene	µg/L	36	G-2 (off site)
Toluene	µg/L	62	G-2 (off site)
Xylenes (total)	µg/L	549	FYMW-2 (on site)
Metals			
Antimony	µg/L	30.5	G-1 (off site)
Lead	µg/L	3,020	G-3 (off site)

Notes:

µg/L – microgram per liter

VOC – volatile organic compound

Results from the remedial investigation sampling detected groundwater contamination in both on-site and off-site monitoring wells. BTEX, benzene-related compounds, lead, and antimony concentrations exceeded NYSDEC Class GA Groundwater Standards in samples collected from monitoring well FYMW-2 (located near the former UST area) and from each off-site sample location. A marked reduction was found in detected VOC concentrations compared to concentrations detected in the 1994 Preliminary Investigation Report (STV and EPM 1994), likely due to the removal and excavation of USTs and contaminated soil from the site in 1995 (see Section 10).

In 2008, an additional site investigation was conducted to further identify the extent of petroleum contamination caused by historical operations at the site (LIRR 2008c). Prior to the investigation, as recommended in the 2007 Site Investigation Work Plan, two

groundwater monitoring wells were re-installed 15 feet bgs at the locations of former on-site monitoring wells and three new monitoring wells were installed, also 15 feet bgs, downgradient of the site (see Attachment 4; LIRR 2007e). Groundwater samples were collected from each of the five newly installed monitoring wells and one additional sample was also collected from existing well FYMW-3. Groundwater samples were analyzed for STARS List VOCs and SVOCs (including MTBE; LIRR 2008c). Analytes that exceeded their respective recommended groundwater standards (NYSDEC Class GA Groundwater Standards) are summarized in the following table:

Analyte	Units	Maximum Groundwater Concentration	Sampling Location
VOCs			
1,2,4-Trimethylbenzene	µg/L	631	FYMW-2A (on site)
1,3,5-Trimethylbenzene	µg/L	223	FYMW-2A (on site)
Benzene	µg/L	195	FYMW-2A (on site)
Ethyl Benzene	µg/L	595	FYMW-2A (on site)
Isopropyl benzene	µg/L	80.3	FYMW-2A (on site)
Naphthalene	µg/L	284	FYMW-2A (on site)
n-Propylbenzene	µg/L	183	FYMW-2A (on site)
sec-Butylbenzene	µg/L	14.4	FYMW-2A (on site)
Toluene	µg/L	64	FYMW-2A (on site)
o-Xylene	µg/L	593	FYMW-2A (on site)
m,p-Xylenes	µg/L	1,860	FYMW-2A (on site)

Notes:

µg/L – microgram per liter

VOC – volatile organic compound

VOC concentrations, namely BTEX and benzene-related compounds, exceeded NYSDEC Class GA Groundwater Criteria at monitoring well FYMW-2A located in the vicinity of the former UST area. Three VOC exceedences, including benzene (1.12 micrograms per liter [µg/L]), isopropyl benzene (7.99 µg/L), and n-propylbenzene (10.2 µg/L) were also detected in well FYMW-5 located off site to the northwest, suggesting contamination may be migrating off site to the northwest (LIRR 2008c).

After the 2008 Site Investigation, LIRR contracted Miller Environmental Group, Inc. (MEG) to perform quarterly groundwater sampling for analysis of STARS VOCs and SVOCs at the same groundwater monitoring locations sampled in the 2008 Site Investigation (see Attachment 4). Results of these analyses are presented in quarterly progress reports, which have been released for the site since 2007 (LIRR 2007a, 2007b, 2007c, 2007d, 2008a, 2008b, 2008c, 2008d, 2009a, 2009b, 2009c, 2009d, 2010a, 2010b, 2010c, 2010d, 2011a, 2011b). STARS SVOCs have not been detected in collected groundwater samples. Elevated concentrations of BTEX and benzene-related compounds represent the majority of VOC exceedences detected. VOCs exceeding their respective NYSDEC Class GA Groundwater Standards are summarized in the following table:

Sampling Date	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7
01/06/09	11	6	1	7	1	0
04/02/09	11	6	1	13	2	2
07/06/09	10	2	1	11	1	1
09/24/09	11	0	3	5	1	1
12/22/09	10	2	6	7	0	0
04/09/10	10	0	0	1	0	0
06/21/10	11	2	0	0	0	0
10/11/10	13	2	0	0	0	0
12/29/10	12	1	0	1	2	0
07/12/11	0	0	0	0	0	0

Based on the quarterly groundwater sampling collected in 2008 and 2009, MEG developed two groundwater contour maps (see Attachments 5 and 6).

9.2.2 Groundwater Summary

Groundwater investigations conducted at the site in 1994, 1996, and 2008 indicate COPCs are present in the groundwater at levels that exceed NYSDEC Class GA Groundwater Standards. COPCs detected in off-site sampling indicate contamination may have migrated off site (LIRR 2008c). Further groundwater monitoring performed at the site between the years 2009 to 2011 indicate a decrease in detected VOC exceedences.

9.3 Surface Water

Surface Water Investigation	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
SPDES Permit (Current or Past)	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Industrial Wastewater Discharge Permit (Current or Past)	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Stormwater Data	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Catch Basin Solids Data	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Wastewater Data	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

9.3.1 Stormwater and Wastewater Systems

Information on stormwater infrastructure was not found in available site documents. The site is located in an area bordering two drainage area types: the Bowery Bay WPCP sewershed and the Newtown Creek WPCP sewershed (NYCDEP 2007).

9.4 Sediment

Creek Sediment Data ☐ Yes ☐ No ☒ Not Applicable

Information regarding sediment investigations was not identified in documents available for review.

9.5 Air

Air Permit ☐ Yes ☒ No
Air Data ☐ Yes ☒ No

Information regarding air discharges from the site was not identified in documents available for review.

10 REMEDIATION HISTORY (INTERIM REMEDIAL MEASURES AND OTHER CLEANUPS)

In August 1995, as part of rehabilitating its maintenance and yard facilities and in compliance with environmental regulations, LIRR identified the need for tank closure and removal procedures at the site that involved excavation, cleaning, removal, demolition, transportation, and disposal of several petroleum USTs, soils, and liquids

(STV and EPM 1995). A total of nine USTs and one AST were removed, approximately 100 tons of contaminated soil was excavated, and approximately 500 gallons of petroleum contaminated water was disposed of (STV and EPM 1995; USEPA 1995). Concrete service islands, lighting fixtures, and underground piping were removed and a vacuum truck emptied each tank prior to removal and excavation. Sludge residue from within the tanks was shipped off site in four 55-gallon drums, and the nine USTs and one AST were purged with nitrogen gas, cleaned, and transported to a scrap metal recycler (STV and EPM 1995).

As part of tank closure and removal procedures, excavated soils were field screened with a PID, and results registered between 10 ppm to 500 ppm (STV and EPM 1995). A total of ten post-excavation soil samples were also collected from two excavations, field screened with the PID and analyzed for VOCs using USEPA Method 8021 with MTBE and total lead. Soil samples were collected from each of the four sidewalls of each excavation, and one soil sample was collected from 2 feet below each excavations bottom (STV and EPM 1995). Analytes that exceeded their respective recommended soil cleanup standards are summarized in the following table:

Analyte	Units	Maximum Soil Concentration
VOCs		
1,2,4-Trimethylbenzene	ppb	14,000
1,3,5-Trimethylbenzene	ppb	7,800
Benzene	ppb	1,400
Ethyl Benzene	ppb	3,600
Isopropyl benzene	ppb	920
Naphthalene	ppb	3,000
n-Propylbenzene	ppb	2,900
p-Isopropyltoluene	ppb	590
sec-Butylbenzene	ppb	590
Toluene	ppb	1,600
xylene	ppb	11,000
o-Xylene	ppb	2,800
m,p-Xylenes	ppb	9,900
Metals		
Lead	ppm	1,200

Notes:

ppb – parts per billion

ppm – parts per million

VOC – volatile organic compound

Results indicated elevated levels of VOCs and lead that were in excess of the NYSDEC TAGM 4046 Recommended Cleanup Objectives. Maximum concentrations detected for VOCs and lead were 14,000 ppb and 1,200 ppm, respectively.

In 1997, a Remedial Action Plan (RAP) was developed for the site based on findings from the 1994 Preliminary Investigation, the 1995 Tank Closure Report, and the 1997 RI (STV 1997). The RAP recommended continual groundwater monitoring to be performed at the site on a quarterly basis and using risk-based groundwater quality standards in determining potential human health effects and future remedial needs. Available site documents did not indicate if the 1997 SAP was fully implemented; however, further groundwater monitoring was conducted at the site after the 2008 Site Investigation (see Section 9.2.1).

In 2009, LIRR provided Dvirka and Bartilucci Consulting Engineers (D&B) with a Technical Statement of Work (TSOW) for further investigation of the site (LIRR 2009e, 2011b). In fulfillment of the TSOW, in May 2010, D&B provided to LIRR a Site-Specific Health and Safety Plan (D&B 2010a), and in October 2010, they provided a RI Work Plan (D&B 2010b). Primary objectives of the RI outlined in the Work Plan include the following: 1) determine the extent of soil and groundwater contamination at the site; 2) determine how site and surrounding conditions may affect contaminant migration; 3) identify potential contamination migration pathways; 4) determine the need for supplemental data; and 5) identify appropriate remedial actions (if necessary) to obtain closure of NYSDEC Spill No. 00650112 (D&B 2010b).

Field work was scheduled to begin in August 2011. No reports released after this date were located in available documents.

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12 ATTACHMENTS

Figures

Figure 1 Site Vicinity Map: LIRR Long Island City Freight Yard (AOC 1)

Tables

Table 1 Potential Areas of Concern and Transport Pathways Assessment

Supplemental Attachments

Attachment 1 Figure 2 – LIRR LIC Freight Yard AOC 1 Boring Location Plan View (STV and EPM 1994)

Attachment 2 Figure 7 – LIRR LIC Freight Yard AOC 1 Inferred Extent of Soil Contamination (STV and EPM 1994)

Attachment 3 Figure 12 – LIRR LIC Freight Yard AOC 1 Inferred Extent of Dissolved Phase Hydrocarbon Contamination (STV and EPM 1994)

Attachment 4 Figure 3 – LIRR LIC Freight Yard AOC 1 Sample Location Map (LIRR 2008c)

Attachment 5 Figure 1 – LIRR LIC Freight Yard Site Plan (11/11/2008; MEG 2009a)

Attachment 6 Figure 1 – LIRR LIC Freight Yard Site Plan (4/10/2009; MEG 2009b)

Table 1
Potential Areas of Concern and Transport Pathways Assessment – LIRR Long Island City Freight Yard (AOC 1)

Potential Areas of Concern	Media Impacted					COPCs														Potential Complete Pathway						
	Surface Soil	Subsurface Soil	Groundwater	Catch Basin Solids	Creek Sediment	TPH			VOCs			SVOCs	PAHs	Phthalates	Phenolics	Metals	PCBs	Herbicides and Pesticides	Dioxins/Furans	Overland Transport	Groundwater	Direct Discharge – Overwater	Direct Discharge – Storm/Wastewater	Discharge to Sewer/CSO	Bank Erosion	Air Releases
						Gasoline-Range	Diesel – Range	Heavier – Range	Petroleum Related (e.g., BTEX)	VOCs	Chlorinated VOCs															
Spills	?	?	?	--	--	√	?	?	?	?	?	?	?	?	?	?	?	?	?	--	--	--	--	?	--	?
Former AST/USTs	?	?	?	--	--	√	?	?	?	?	?	?	?	?	?	?	?	?	?	--	--	--	--	?	--	?
Former gas station (circa 1943 – 1984)	?	√	√	--	--	√	?	?	?	√	?	√	√	?	?	√	?	?	?	--	√	--	--	?	--	?
Former solid waste management facility (1994 – unknown)	?	?	?	--	--	?	?	?	?	?	?	?	?	?	?	?	?	?	?	--	--	--	--	?	--	?
Lumber yard (2007 – present)	?	?	?	--	--	?	?	?	?	?	?	?	?	?	?	?	?	?	?	--	--	--	--	?	--	?

Notes:

√ – COPCs are/were present in areas of concern having a current or historical pathway that is determined to be complete or potentially complete.

? – There is not enough information to determine if COPC is/was present in area of concern or if pathway is complete.

-- – Current or historical pathway has been investigated and shown to be not present or incomplete.

AST – aboveground storage tank

BTEX – benzene, toluene, ethylbenzene, and xylene

COPC – constituent of potential concern

CSO – combined sewer overflow

PAH – polycyclic aromatic hydrocarbon

PCB – polychlorinated biphenyl

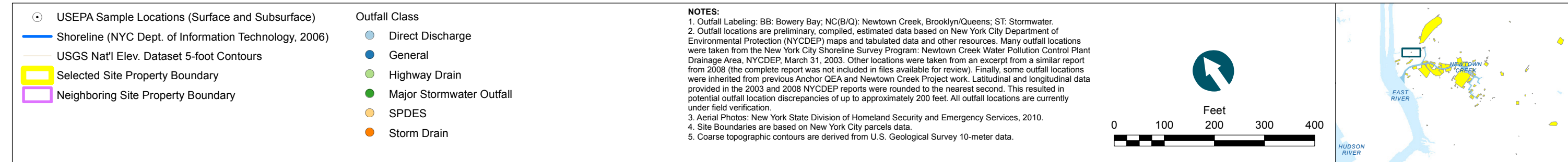
SVOC – semi-volatile organic compound

TPH – total petroleum hydrocarbon

UST – underground storage tank

VOC – volatile organic compound

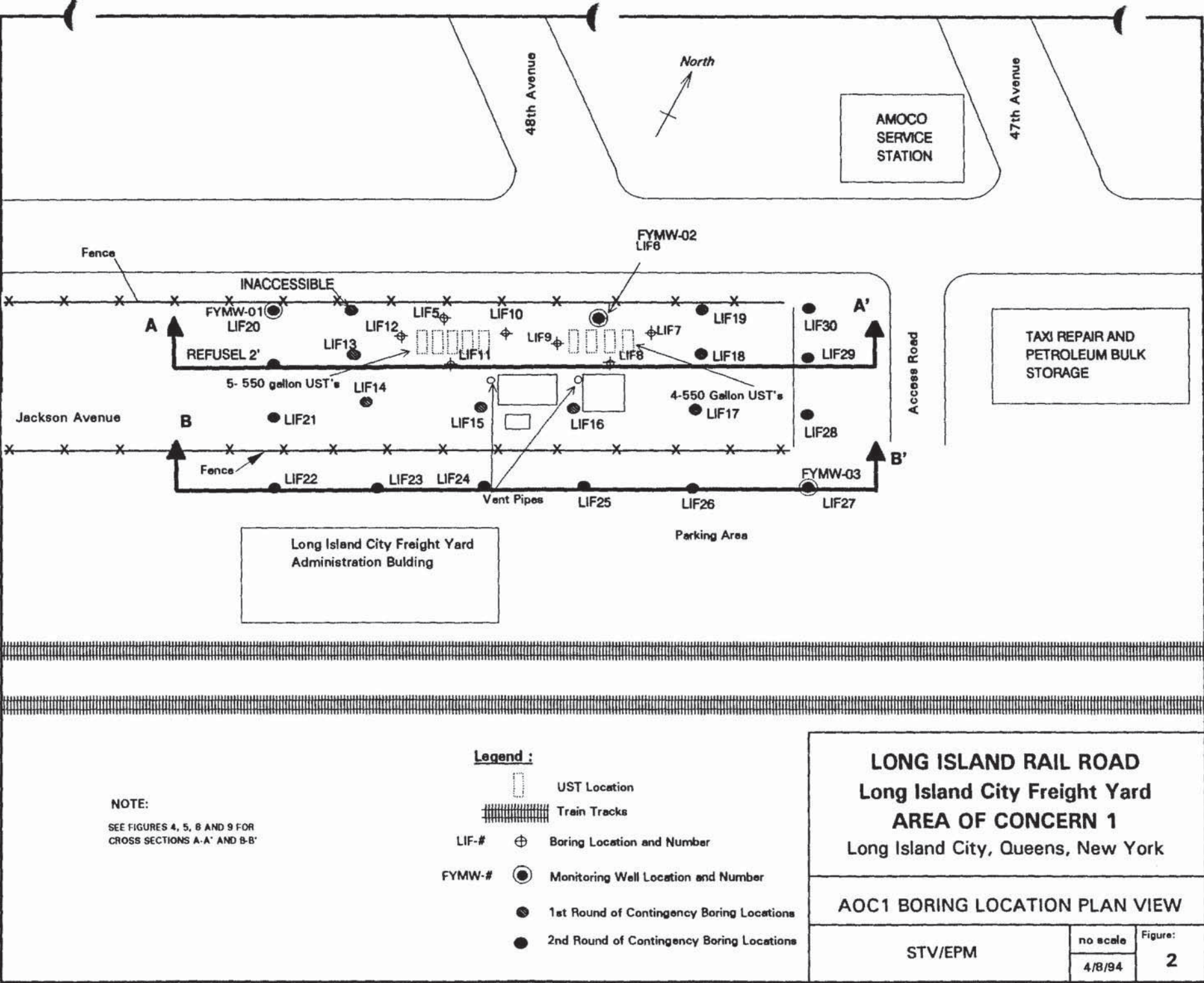
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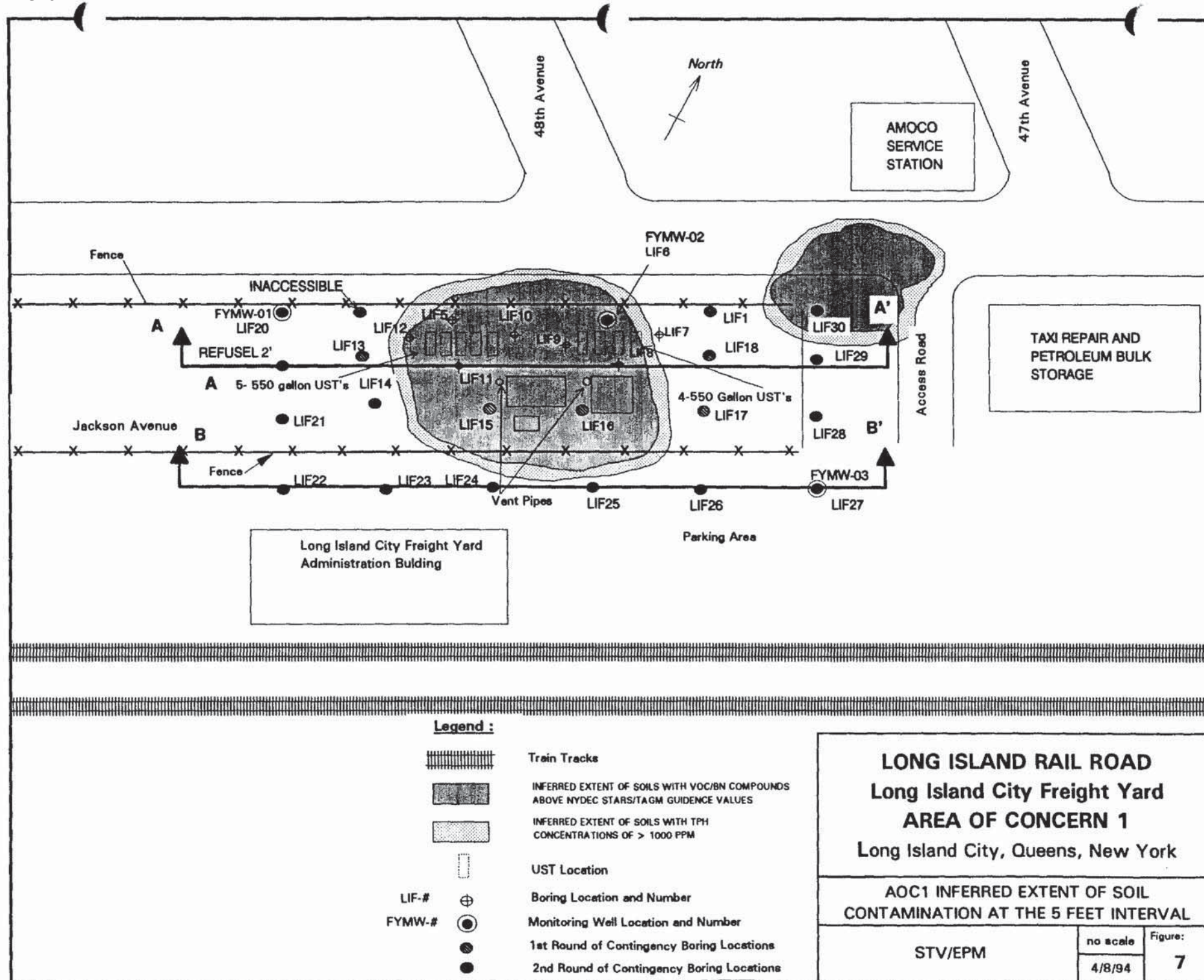


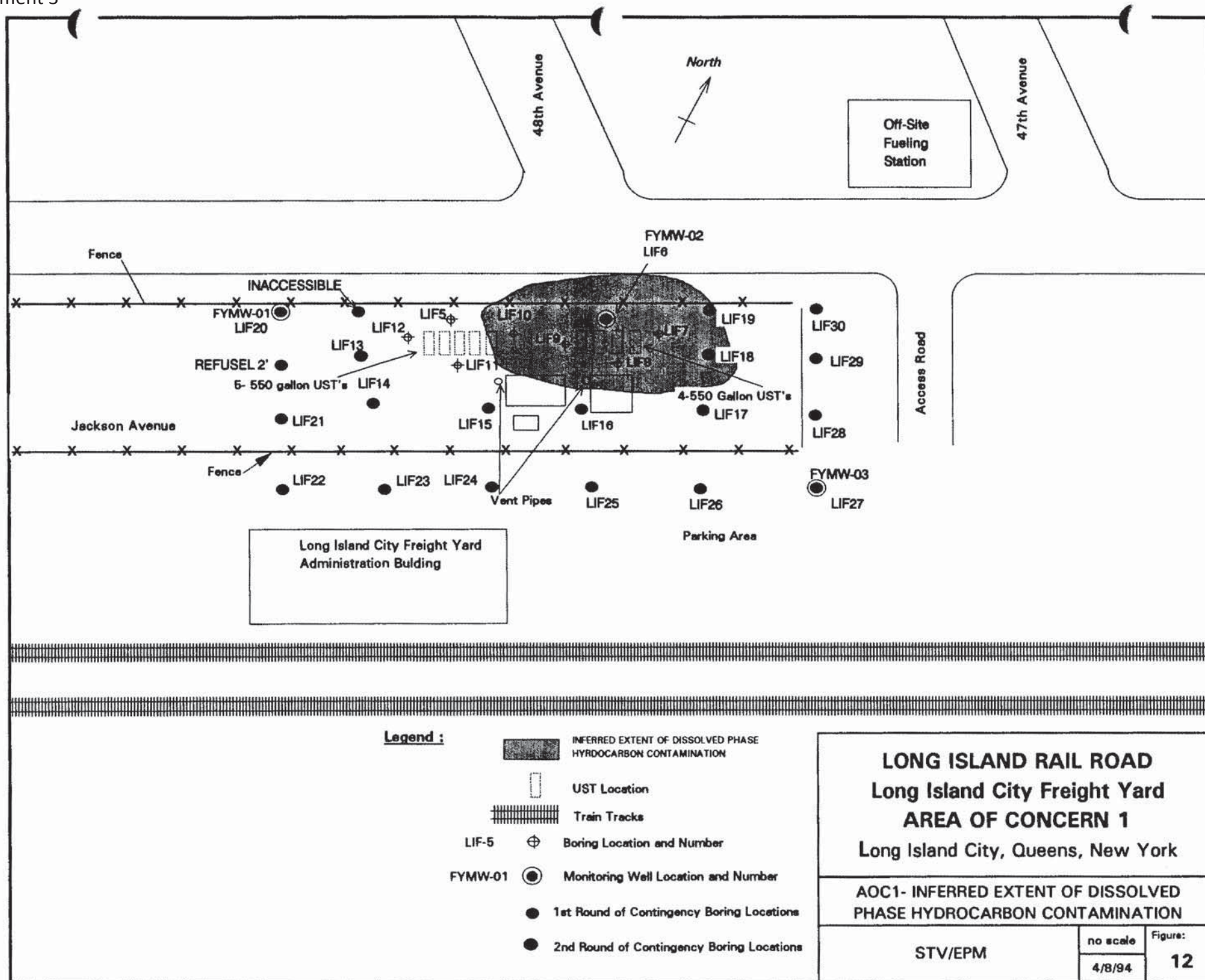
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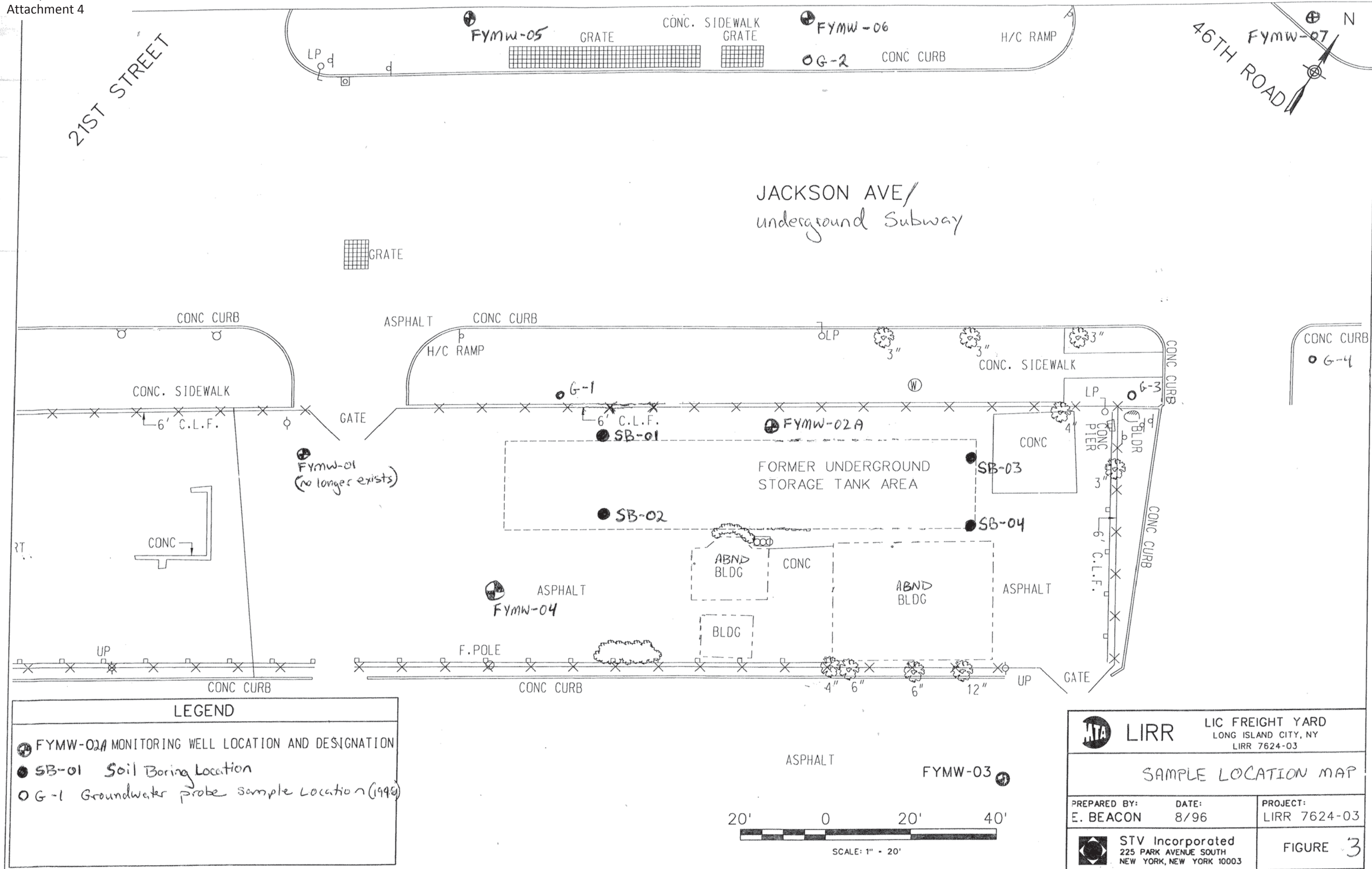
Figure 1
Site Vicinity Map
Draft Upland Site Summary: LIRR Long Island City Freight Yard (AOC 1)
Newtown Creek RI/FS

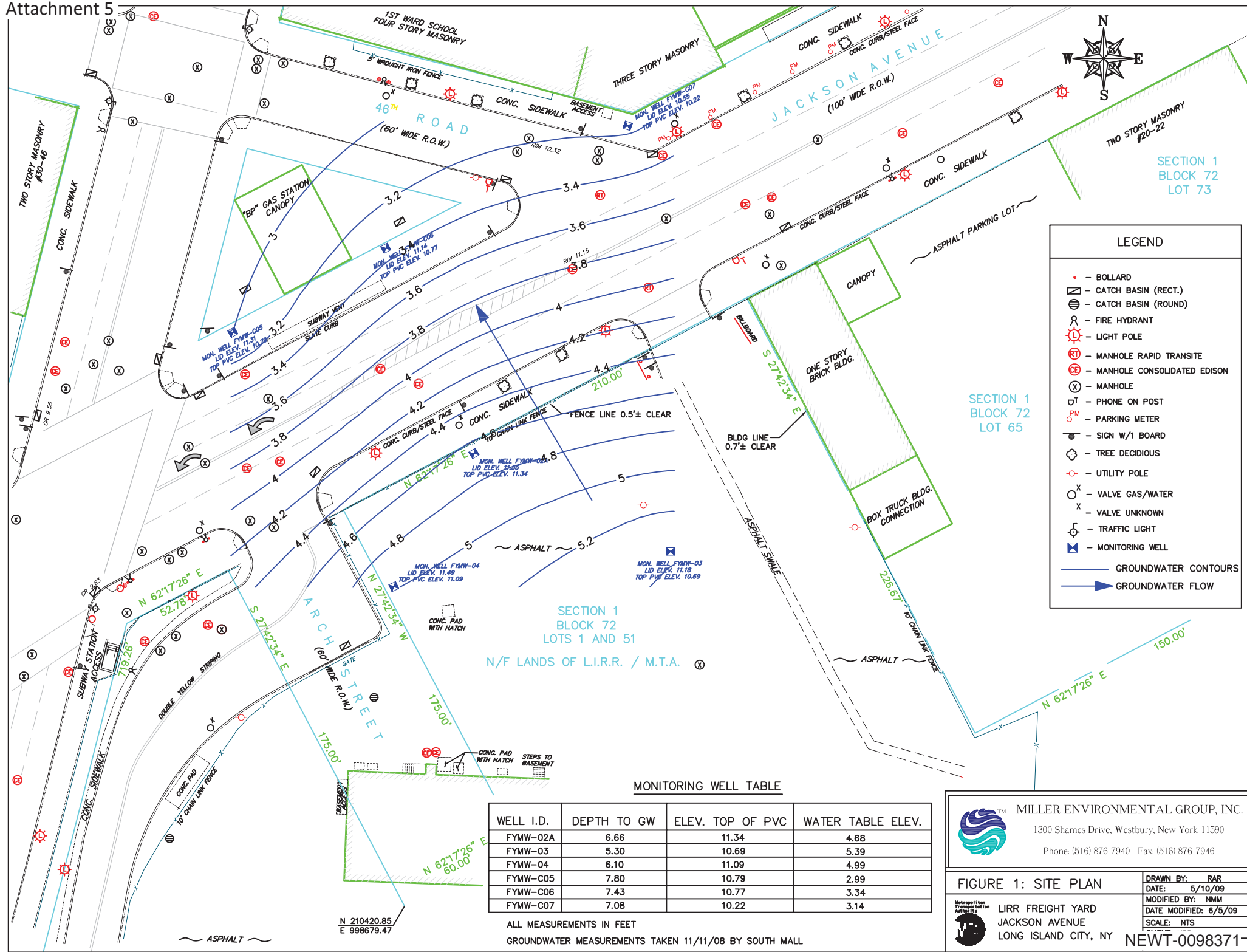
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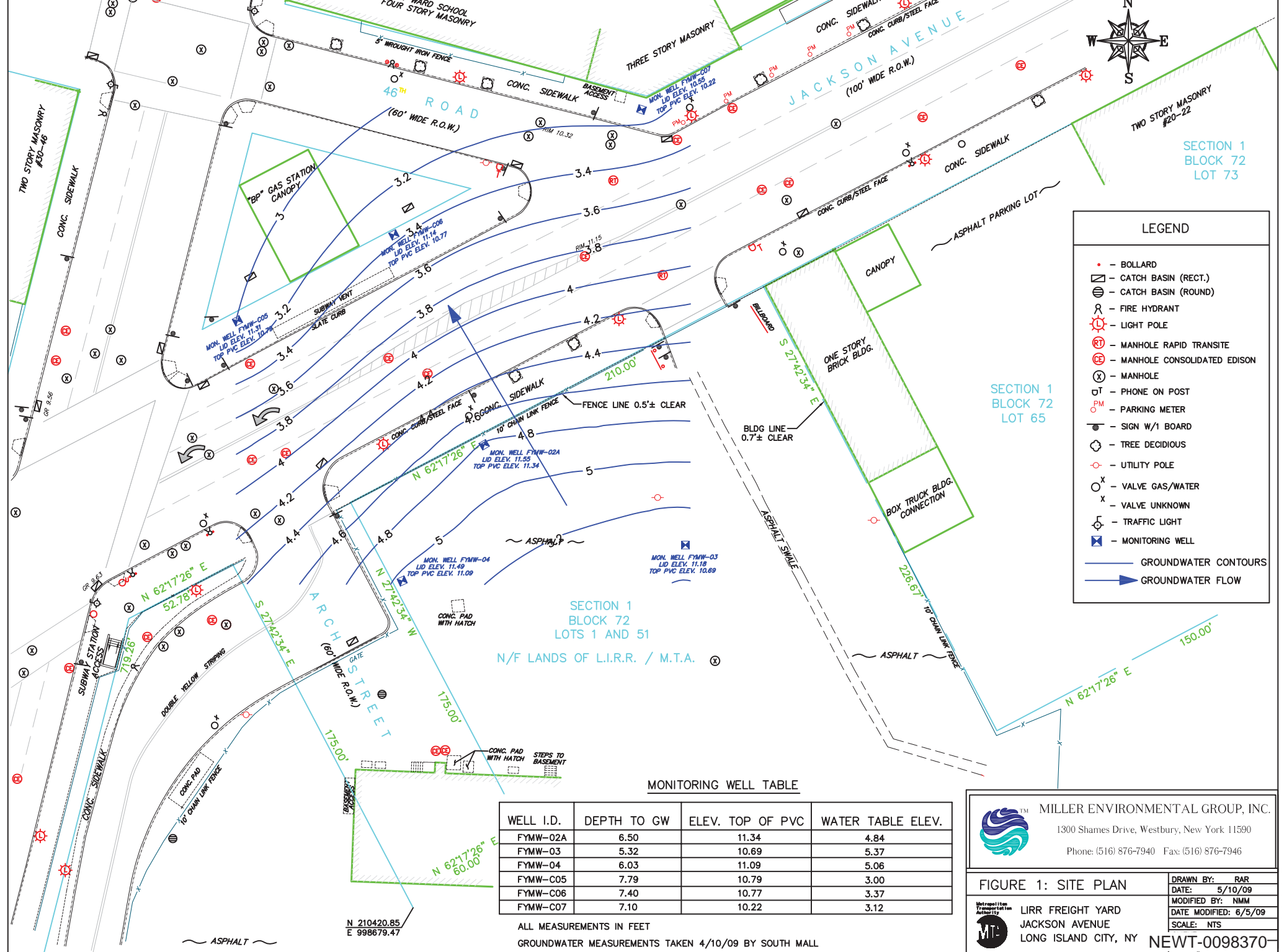














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FIGURE 1: SITE PLAN


DRAWN BY: RAR

DATE: 5/10/09

MODIFIED BY: NMM

DATE MODIFIED: 6/5/09

SCALE: NTS



LIRR FREIGHT YARD
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NEWT-0098370